

Stage 3 - Plan Learning Experiences and Instruction

Note: How are you using technology as a teacher? How are your students using technology?

(W) .1 Students understand that....(**Where**), Real Life (**Why**), MLR or CCSS (**What**)

(H) .2 Engage (**Hook**)

(E) .3 Students will know...(Equip), [Graphic Organizer](#) and [Cooperative Learning](#) the content (**Explore**), working on product (partners, teams...) (**Experience**)

(R) .4 Checking for Understanding Strategies during instruction (**Rethink**), Self-Assessment using Rubrics or Checklist, feedback by students (**Rethink/Revise**), and feedback by teacher on Product (**Revise/Refine**),

(E) .5 Formative Assessment - List the one's used in this lesson. (**Evaluate**)

(T) .6 Give an example of each Multiple Intelligences (**Tailor**)

[Verbal-Linguistic](#)

[Logical/Mathematical](#)

[Visual/Spatial](#)

[Bodily/Kinesthetic](#)

[Musical/Rhythmic](#)

[Intrapersonal](#)

[Interpersonal](#)

[Naturalist](#)

(O) .7 Students will be able to ...(**Organize**), Product: Type II Technology, Number of Days:

[Recipes4Success Lesson Library](#). Here you will find exciting, standards-based lessons for Tech4Learning products. Each lesson includes step-by-step directions for both teachers and students, as well as links to high-quality examples, templates, and support resources.

Lesson 1

Consider the W.H.E.R.E.T.O. elements. (L)

(W)1.1 Students will understand that the Pythagorean Theorem is used to find the length of a third side of a right triangle in applied problems.(**Where**), Finding the 3rd side of a triangle is important during construction of everyday objects and materials. (**Why**), *Define trigonometric ratios and solve problems involving right triangles.* (**What**)

(H) 1.2 We will be reading the story "Whats your angle Pythagoras" and act out the story as it unfolds in front of your eyes.

(E)1.3 Students will know the Pythagorean Theorem formula and pertinent terminology such as hypotenuse, square root, exponent, and leg. (**Equip**), Students will explore a step-by-step chart to document the order in which they will be solving a problem. (**Explore**), Students will take place in a think-pair-share activity to practice solving problems by themselves using Geogebra and then working and comparing outcomes with a partner. (**Experience**)

(R) 1.4 Walk around and look for misconceptions through checking notes and asking questions.

(Rethink), Students will revisit the incorrect solutions and revise their answer from teacher feedback.
(Revise)

(E) 1.5 Pre-assessment: Verbal Discussion. **Check for understanding:** Lets compare notes. **Timely Feedback:** Teacher feedback **(Evaluate)**

(T) 1.6 Verbal: Students will participate in a think-pair-share activity to help learn and practice the Pythagorean Theorem.

Logical: Students will explore and use a step-by-step chart to assist in their understanding of the Theorem.

Visual: Students will explore the Geogebra application to represent the use of the Pythagorean Theorem.

Kinesthetic: While reading the book "Whats your angle Pythagoras", students will act out the story as it unfolds.

Interpersonal: With a partner, students will compare and contrast how to find the third side of triangle through use of the Geogebra program.

Intrapersonal: Students will attempt to solve some problems independently to challenge their understanding of the theorem.

(O)1.7 Students will be able to illustrate how the Pythagorean Theorem is used to solve problems concerning right triangles. **(Interpret), Product:** Geogebra. **Number of days:** 3 days

Lesson 2

Consider the W.H.E.R.E.T.O. elements. (L)

(W)2.1 Students will understand that the Pythagorean Theorem is used to find the length of a third side of a right triangle in applied problems.**(Where),**

In everyday application, google sketch-up will be used to visually demonstrate the use of the Pythagorean Theorem in constructing a building. **(Why),** *Define trigonometric ratios and solve problems involving right triangles.* **(What)**

(H) 2.2 We will be exploring a new program on the computer to construct our triangles and solve using the Pythagorean Theorem.

(E)2.3 Students will know the Pythagorean Theorem formula and pertinent terminology such as hypotenuse, square root, exponent, leg, area, and perimeter. **(Equip),** Students will explore a step-by-step chart to document the order in which they will be solving a problem. **(Explore),** Students will participate in a Jigsaw activity to practice and demonstrate their understanding of the theorem through the use of Google Sketch-up. **(Experience)**

(R)2.4 Through taking a CFU Quiz at the beginning of class, students will demonstrate their understanding of the content and fix any problems that were incorrect. **(Rethink),** Students are going to revise their Google Sketch-up product based on peer review feedback from their partner. **(Revise)**

(E) 2.5 Check for understanding: CFU Quiz **Timely Feedback:** Peer assistance

(T) 2.6 Verbal: Through explanations students will compare, contrast, and reteach their answers that they have received during a jigsaw activity.

Logical: Using the Pythagorean Theorem formula and pertinent vocabulary, students will solve each problem in the jigsaw and show the step-by-step breakdown of the process.

Visual: Through the Google Sketch-up program, students will see how a triangle moves and is altered based on the measurements of the legs. As the legs change, the hypotenuse changes.

Kinesthetic: Through the jigsaw activity, students will move and work in different groups to understand and explain their problems to each other.

Interpersonal: The jigsaw activity requires students to meet with others that have the same problems and compare and contrast their answers. They are then required to teach peers in other groups their problems and explain their answers.

Intrapersonal: Students are going to work on the Google Sketch-up program to practice using the Pythagorean Theorem.

(O)2.7 Students will be able to demonstrate how to calculate the 3rd side of a right triangle. **(Explain),**

Product: Google Sketch-up. **Number of days:** 1 day

Lesson 3

Consider the W.H.E.R.E.T.O. elements. (L)

(W)3.1 Students will understand that the Pythagorean Theorem was created by a mathematician in the 6th century for the purpose of construction. **(Where),** Through analyzing and following the life of Pythagoras, we will derive a conclusion and opinion as to how the theorem came to be. **(Why),** *Define trigonometric ratios and solve problems involving right triangles.* **(What)**

(H) 3.2 We will experiment with Garageband and Capzle programs to capture the life of Pythagoras.

(E) 3.3 Students will know important events and people consisting of Pythagoras, the creation of the Pythagorean Theorem, and events that assisted in the creation of the theorem. **(Equip),** Students will explore a flow chart to help organize the timeline of Pythagoras' life. **(Explore),** Students will work with a partner to create a biography and timeline of Pythagoras' life. **(Experience)**

(R) 3.4 Through directed paraphrasing, students will create a biography and timeline using precise and exact historical information. Any misrepresentations in the information they have obtained will be changed through partner criticism. **(Rethink),** Through teacher conferences and feedback, students will correct and alter their facts. **(Revise)**

(E) 3.5 Check for understanding: Directed Paraphrasing. **Timely Feedback:** Teacher conference.

(T)3.6 Verbal: Students will work with a partner to create a biography and timeline together.

Logical: Students will place the order of events in the correct order and create a timeline that follows the creation of the theorem. From here they will create a biography.

Visual: Through the use of garageband and capzle students will place events in a correct and consistent order. Students will also be using material from the previous lessons to help in assisting them with their understanding (Google Sketch-up, Geogebra, etc)

Interpersonal: Working in pairs will allow students to defend their organization of their timeline or alter it based on peer criticism and debate. Together they will form a final product of a timeline and biography.

Intrapersonal: Students will work independently on a flow chart to organize their thoughts and the events.

Musical: Using music from the time frame, students will add this to their biography and timeline to help set us in the mood during their presentation.

(O)3.7 Students will be able to analyze the life of Pythagoras and how the theorem was created. **(Point of View), Product:** Garageband and Capzle. **Number of days:** 2 days

Lesson 4

Consider the W.H.E.R.E.T.O. elements. (L)

(W)4.1 Students will understand that the Pythagorean Theorem was created by a mathematician in the 6th century for the purpose of construction. **(Where)**, There is an argument as to whether Pythagoras should be the only person credited for the construction of the theorem, therefore a debate will take place to hash out the truth. **(Why)**, *Define trigonometric ratios and solve problems involving right triangles.* **(What)**

(H) 4.2 Blogging on blogger and Xtranormal is a great way to express your honest opinion!

(E)4.3 Students will know important events and people consisting of Pythagoras, the creation of the Pythagorean Theorem, and events that assisted in the creation of the theorem. **(Equip)**, Students will explore a story map organizational tool to reconstruct the life of Pythagoras to determine whether he should be solely credited or not. **(Explore)**, Students will take place in a think-pair-share activity where partners will work together who share the same view and opinion of Pythagoras and create a co-blog that demonstrates their paired belief. **(Experience)**

(R) 4.4 Through constant and consistent questioning, students will form questions, opinions, and factual information over Pythagoras and the creation of the theorem. "Whats still confusing me" activity allows students to ask any questions that may still be puzzling them and alter or change their opinion based on facts. **(Rethink)**, Students will work in teams to figure out how they are going to debate their opinion and feelings of Pythagoras. Through peer assistance students may choose to change their minds and personal opinions or stay the same. **(Rehearse)**

(E) 4.5 **Check for understanding:** Whats still confusing me? **Timely Feedback:** Peer assistance

(T)4.6 **Verbal:** Students will be communicating their ideas, thoughts, and feelings through blogger and Xtranormal. Students will need to defend their opinion and feelings about the creation of the Theorem.

Logical: Students will use a story map organizational tool to reconstruct the life of Pythagoras. Students will need to use factual information to defend their beliefs.

Visual: By viewing several different blogs, students will reconsider their side and justify why they supported the side that they did.

Kinesthetic: Students will take part in a think-pair-share activity where they will work in pairs to create a co-blog that demonstrates their belief. Students will move from one group to the next to debate their personal side. Together all different groups will consider all options and all sides.

Interpersonal: Students will work in teams to figure out how they are going to debate their opinion and feelings of Pythagoras.

Intrapersonal: Through the "what still confusing me" activity, students can list any questions, comments, or concerns that they have to later ask a fellow peer or teacher.

(O)4.7 Students will be able to consider how the theorem was derived and determine whether Pythagoras should be the only one credited. **(Empathize)**, **Product:** Blog and Xtranormal. **Number of days:** 1 day

Lesson 5

Consider the W.H.E.R.E.T.O. elements. (L)

(W)5.1 Students will understand that the Pythagorean Theorem is used in everyday applications and situations. **(Where)**, A video will be used to depict real-life applications of the Pythagorean Theorem present around the world. **(Why)**, *Define trigonometric ratios and solve problems involving right*

triangles. (What)

(H) 5.2 Do you want to make a movie and act out a play?

(E) 5.3 Students will know the Pythagorean Theorem formula and pertinent vocabulary such as hypotenuse, exponent, square root, area, perimeter, and leg. They will also know how the Pythagorean Theorem was created and the events that led up to its creation. **(Equip)**, Students will explore a cluster word web to fill out ideas as to where they have personally seen the Pythagorean Theorem used in daily life. **(Explore)**, Through a roundrobin brainstorm activity, students will work together to come up with a class list of everyday applications of the Theorem. With that information, they will begin to brainstorm ideas for their I-Movie. **(Experience)**

(R) 5.4 Through exit tickets, students will write down a place or structure where they believe the Pythagorean Theorem exists. **(Rethink)**, Students will work with a partner to decide on what pictures or structures they want to include in their I-Movie, as well as their explanations of the Theorem as it pertains to each picture. Opinions, mathematical calculations, and ideas may change. **(Revise)**.

(E) 5.5 **Check for understanding:** Exit Tickets **Timely Feedback:** Peer assistance

(T) 5.6 **Logical:** Through the use of graphic organizers, students will plot out when and where the theorem has been used. They will then use the information to create an i-movie.

Visual: Students will look up and find pictures that represent the Pythagorean Theorem. Students will then need to explain why the pictures represent the Theorem.

Musical: Through the creation of an i-movie, students will not only apply music from the century, but will learn about the theorem through watching and listening to the videos.

Kinesthetic: Students will create an I-movie and reenact Pythagoras and how he created the theorem. Students will include real life pictures of the theorem.

Interpersonal: Students will be working in pairs to find pictures or structures they want to include into their i-movie. Together they will create their i-movie which will help to demonstrate their understanding of the theorem.

Intrapersonal: Students will work with a cluster word web to brainstorm ideas as to where they have seen the Theorem before.

Natural: Students will take visual representations from nature and apply the Pythagorean theorem to them (buildings, etc). Students will need to research and find the theorem and how it applies in real world and nature.

(O) 5.7 Students will be able to apply the Pythagorean Theorem to real world applications. **(Apply)**,

Product: I-Movie. **Number of days:** 2 Days

Lesson 6

Consider the W.H.E.R.E.T.O. elements. (L)

(W) 6.1 Students will understand that the Pythagorean Theorem is used in everyday applications and situations. **(Where)**, A website will document real-world applications of the theorem, the theorem itself, and the life of Pythagoras. **(Why)**, *Define trigonometric ratios and solve problems involving right triangles. (What)*

(H) 6.2 Interested in making a website to go on the world-wide web?

(E) 6.3 Students will know the Pythagorean Theorem formula and pertinent vocabulary such as hypotenuse, exponent, square root, area, perimeter, and leg. They will also know who Pythagoras was and how the Pythagorean Theorem was created as well as the events that led up to its creation. **(Equip)**,

Students will explore a time-order chart to help document the stages of Pythagoras' life and the creation of the theorem. **(Explore)**, Through working with a partner, students will take all the information they have gained over the unit and create a website to demonstrate their understanding and experience with the Pythagorean Theorem. **(Experience)**

(R) 6.4 Through observations, students will work on creating their websites with gained knowledge of the Pythagorean Theorem. **(Rethink)**, Using all of their information and notes from the unit (teacher feedback), students will solidify their opinion and understanding of Pythagoras, the theorem, and the creation. **(Revise)**.

(E) 6.5 **Check for understanding:** Observations **Timely Feedback:** Teacher feedback

(T) 6.6 **Verbal:** Working with a partner, students will work through all the material gained so far and figure out what they want on their website. Through communication with their partner, students will set up and organize their website.

Logical: Students will use a time order chart to document the stages of Pythagoras' life and the creation of the theorem. Using this information and all material gained over the unit, students will create a website.

Visual: Students will look at samples of websites and apply their knowledge of the theorem and website design to create a webpage for the web.

Interpersonal: Students will be working with a partner to analyze all of their knowledge and apply it all to one website. Organization will be important.

Intrapersonal: Students will work alone on a time order chart to help express and organize all their ideas and stages of Pythagoras' life.

Natural: Student will link pictures of nature that include the Pythagorean theorem to their website.

Students will also need to explain why and how the pictures express the Pythagorean Theorem.

(O) 6.7 Students will be able to recognize that the Pythagorean Theorem is used in everyday life.

(Reflect), Product: Website. **Number of days:** 2 Days

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